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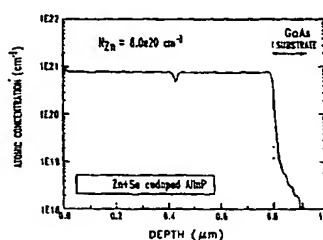
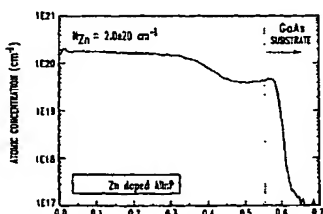
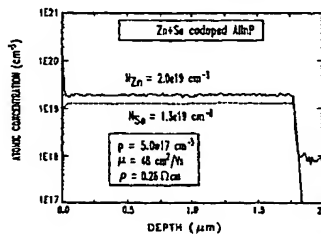
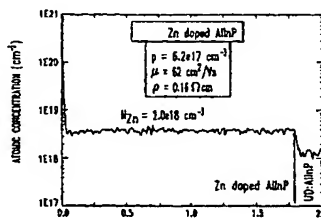
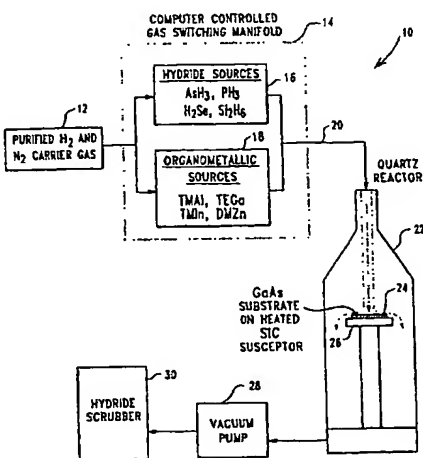
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- (71) Applicant (*for all designated States except US*): **MID-
WEST RESEARCH INSTITUTE** [US/US]; 425 Volker
Boulevard, Kansas City, MO 64110 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **HANNA, Mark,
Cooper** [US/US]; 265 Hopi Place, Boulder, CO 80303

[Continued on next page]

(54) Title: REACTIVE CODOPING OF GAALINP COMPOUND SEMICONDUCTORS



(57) Abstract: A GaAlInP compound semiconductor and a method of producing a GaAlInP compound semiconductor are provided. The apparatus and method comprises a GaAs crystal substrate in a metal organic vapor deposition reactor. Al, Ga, In vapors are prepared by thermally decomposing organometallic compounds. P vapors are prepared by thermally decomposing phosphine gas, group II vapors are prepared by thermally decomposing an organometallic group IIA or IIB compound. Group VIB vapors are prepared by thermally decomposing a gaseous compound of group VIB. The Al, Ga, In, P, group II, and group VIB vapors grow a GaAlInP crystal doped with group IIA or IIB and group VIB elements on the substrate wherein the group IIA or IIB and group VIB vapors produced a codoped GaAlInP compound semiconductor with a group IIA or IIB element serving as a p-type dopant having low group II atomic diffusion.

WO 03/044840 A1



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